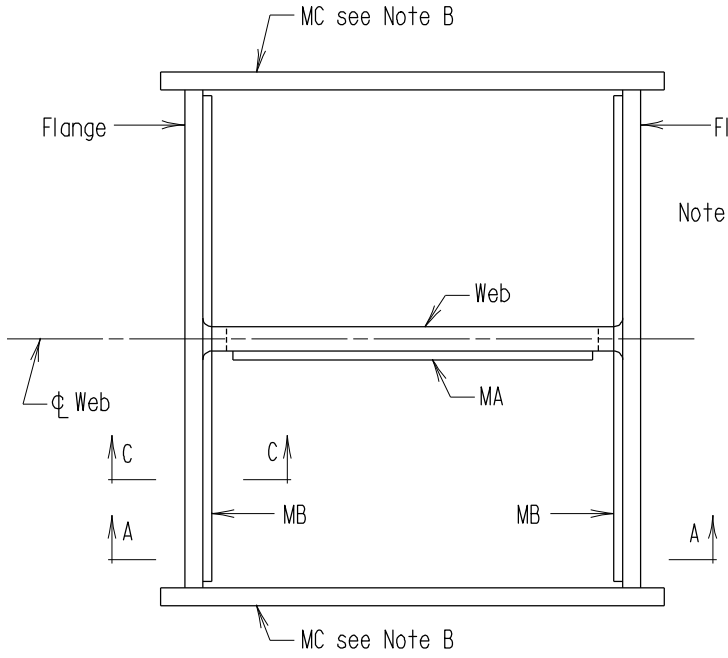
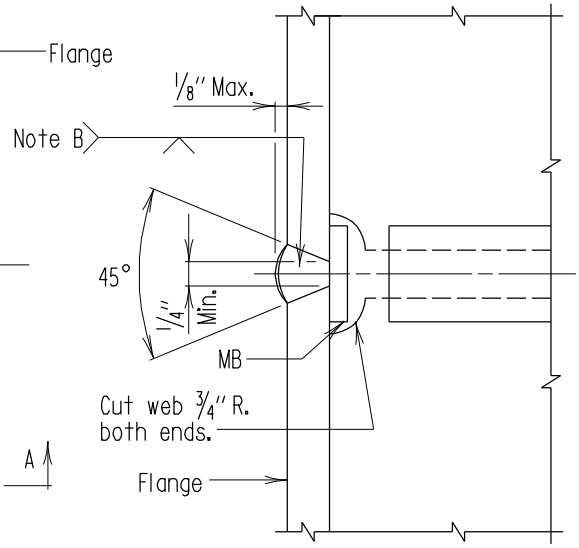


PLAN

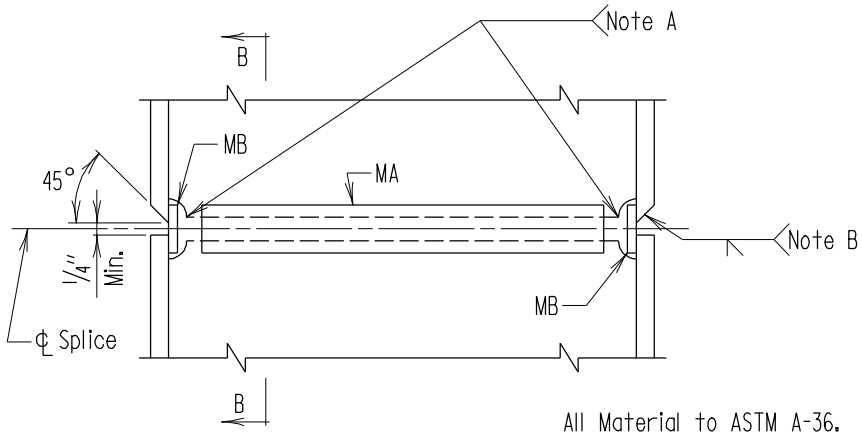
Scale: None



SECTION C-C

ALTERNATE FLANGE WELD

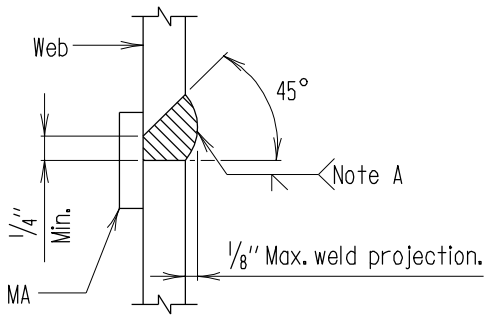
Scale: 6" = 1'-0"



All Material to ASTM A-36.

SECTION A-A

Scale: None



SECTION B-B

Scale: 6" = 1'-0"

Material Required:

	1 Bar MA 1" x 3/16" x 7 1/4"		1 Bar MA 1" x 3/16" x 9 3/8"		1 Bar MA 1" x 3/16" x 1'-0"
For HP 10 Piles	2 Bars MB 1" x 3/16" x 10"	For HP 12 Piles	2 Bars MB 1" x 3/16" x 1'-0"	For HP 14 Piles	2 Bars MB 1" x 3/16" x 1-2 1/2"
	2 Bars MC 3" x 3/8" x 11"		2 Bars MC 3" x 3/8" x 1'-1"		2 Bars MC 3" x 3/8" x 1'-3"

Note A:
End of weld to be smooth and flush with web cut, 1/4" min. effective throat.

Note B:
Bar MC to be tack welded to flange at splice to back up end of flange weld, remove MC after weld is completed. End of weld must be smooth and flush with edge of flange. Grind weld smooth with edge of flange if pile is unsupported in weld area such as: in air, water, or soft mud, 1/4" min. effective throat.

Note C:
Let welds cool to air temperature before driving piles.

Note D:
No pile splicing to be allowed on any portion of pile that is to remain exposed or to be above finished groundline in completed structure.

APPROVAL
C.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 6/30/75

REVISIONS	
SHA	FHWA
9-26-83	6-8-90
4-10-86	6-8-90
2-19-92	-
1-22-01	-

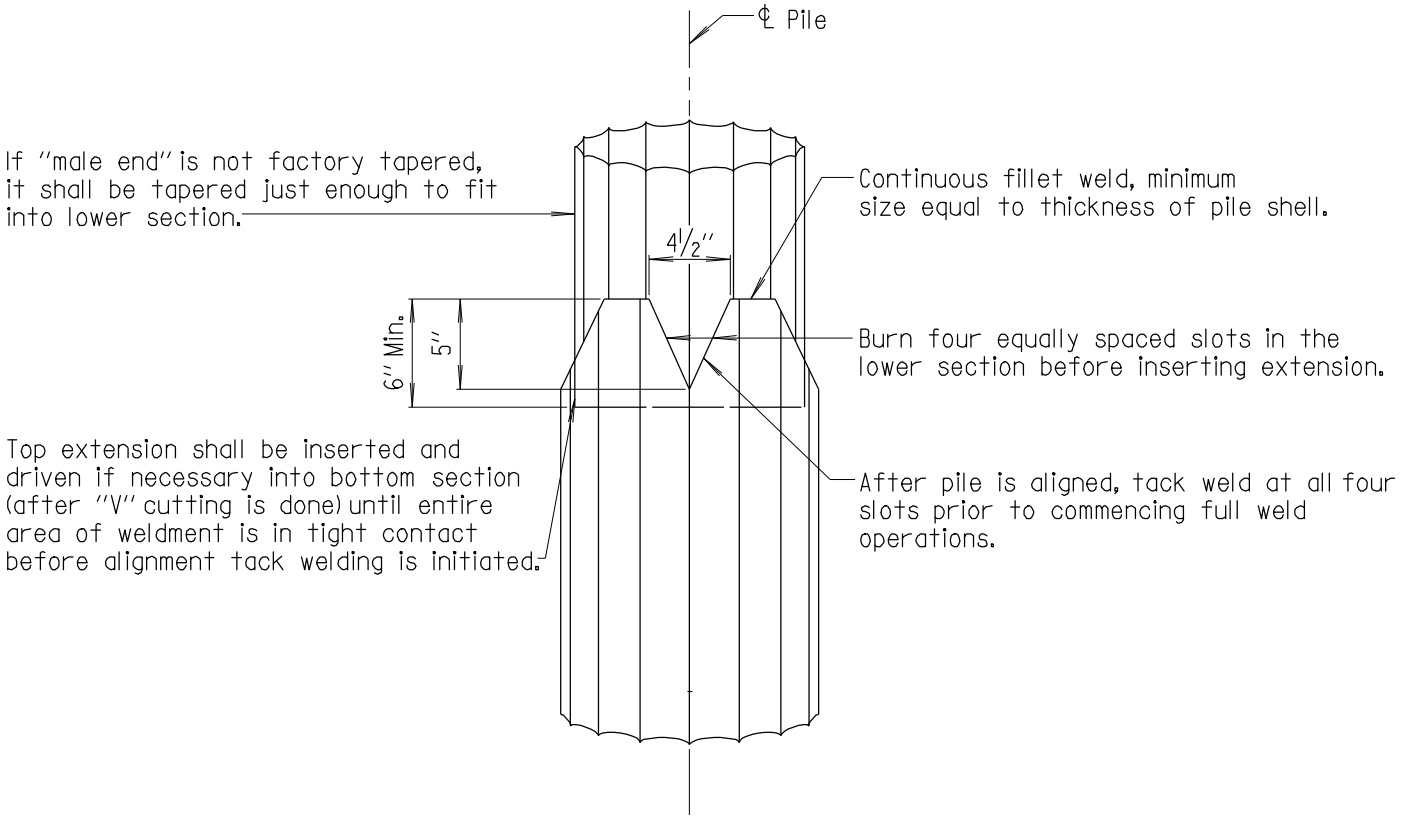
FHWA APPROVAL
DATE: 8-24-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

STEEL H PILE SPLICE DETAILS

STANDARD NO. BR-FD(0.01)-75-15 SHEET 1 OF 1

BRIDGE - FOUNDATION



ELEVATION
Scale: None

Note:
No pile splicing to be allowed on any portion of pile that is to remain exposed in completed structure.

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF STRUCTURES
DATE: 6/20/75

REVISIONS	
SHA	FHWA

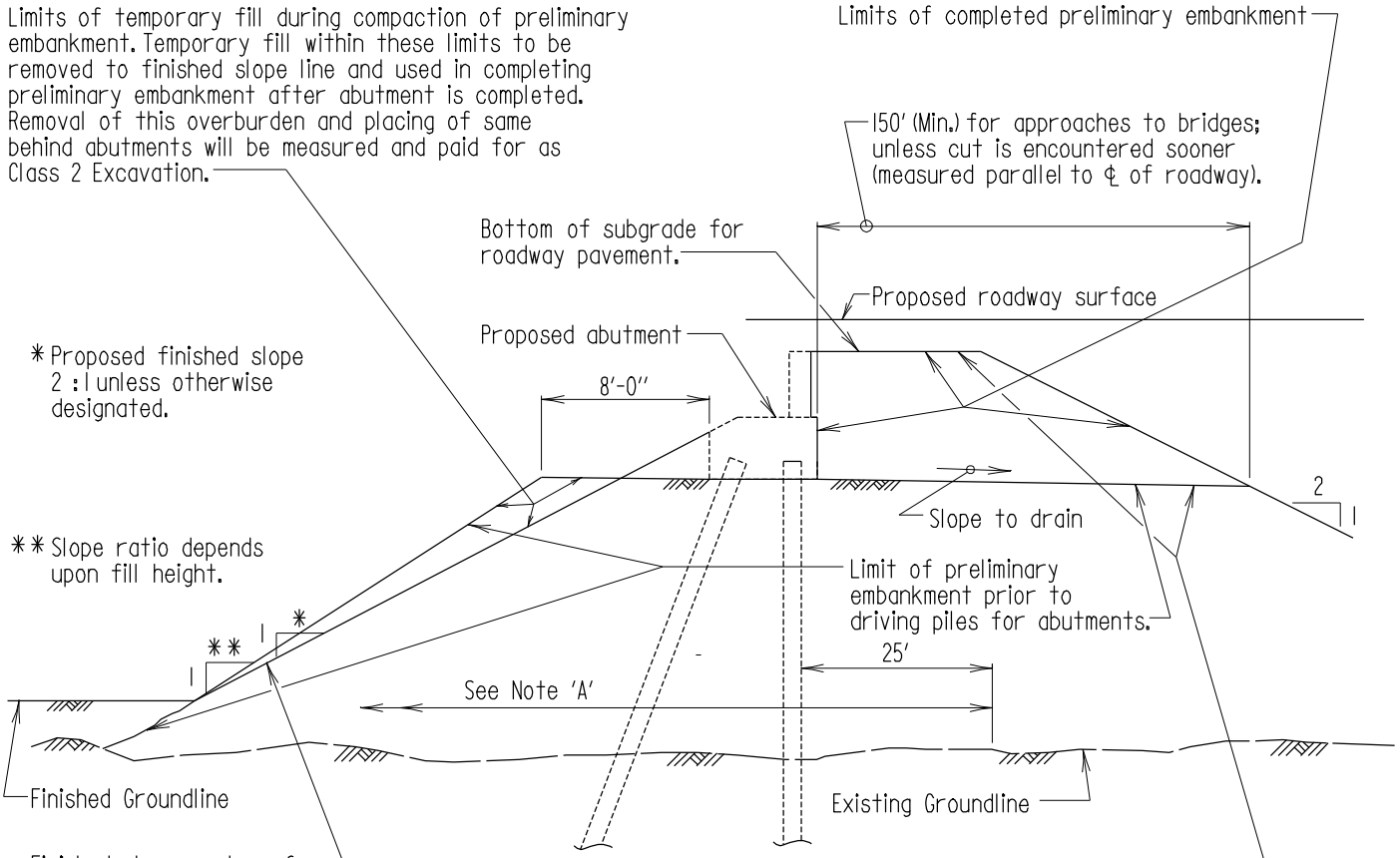
FHWA APPROVAL
DATE: 8-24-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SPLICE FOR CAST-IN-PLACE CONCRETE PILE SHELL

STANDARD NO. BR-FD(0.02)-75-16 SHEET 1 OF 1

BRIDGE-FOUNDATION



ELEVATION

Scale: None

Note A:
No boulders, rocks, or stumps in this area of fill and all stumps, surface boulders and rocks to be removed from existing ground within these limits.

APPROVAL
R S Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 1/8/76

REVISIONS	
SHA	FHWA
11-9-76	11-9-76
4-28-94	·
3-20-01	·
7-24-01	·

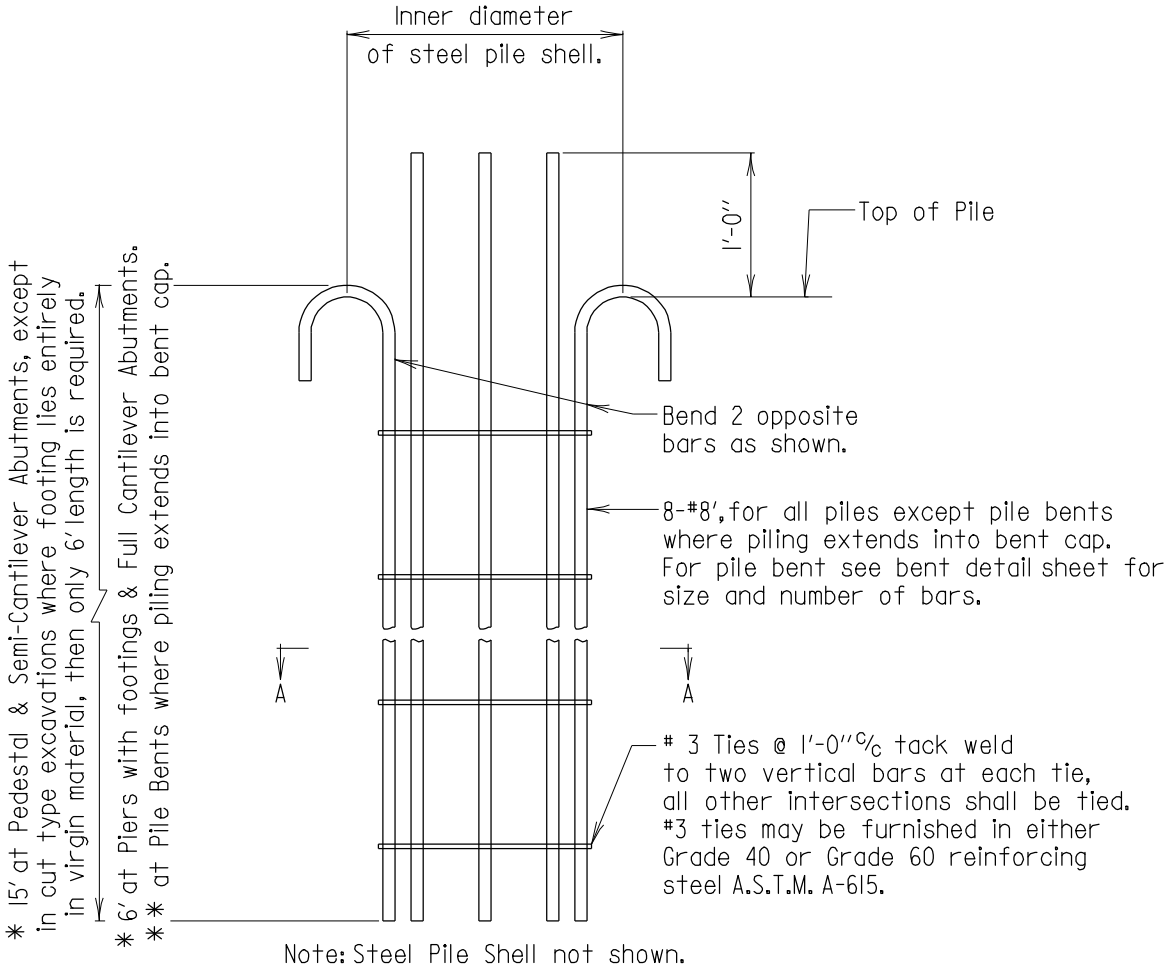
FHWA APPROVAL
DATE: 11-9-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

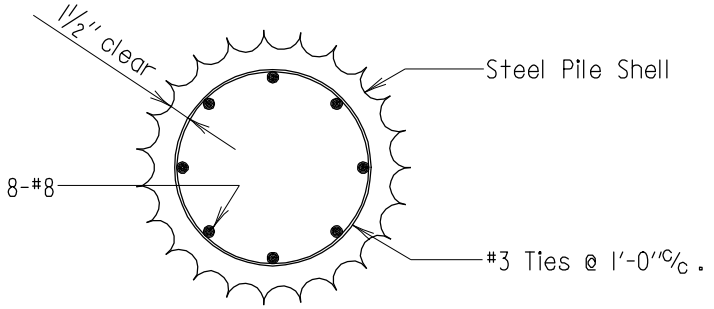
PRELIMINARY EMBANKMENT FOR PEDESTAL TYPE BRIDGE ABUTMENTS ON PILES

STANDARD NO. BR-FD(0.10)-75-17 SHEET 1 OF 1

BRIDGE-FOUNDATION



ELEVATION
Scale:None



SECTION A-A
Scale:None

Note:
1. * Unless otherwise indicated on substructure contract drawing.
2. ** Full height of pile above finished groundline plus 6' unless otherwise indicated on substructure contract drawings.
3. Unless otherwise indicated on other Contract Plans or in the Special Provisions the Steel Pile Shell shall be #5 gauge. This will apply to pile shells with or without deformations.
4. Cage required for all pile shells with or without deformations.

APPROVAL
R.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 8/9/79

REVISIONS	
SHA	FHWA
6-15-84	11-8-84
6-16-92	·
10-27-92	·
1-22-01	·

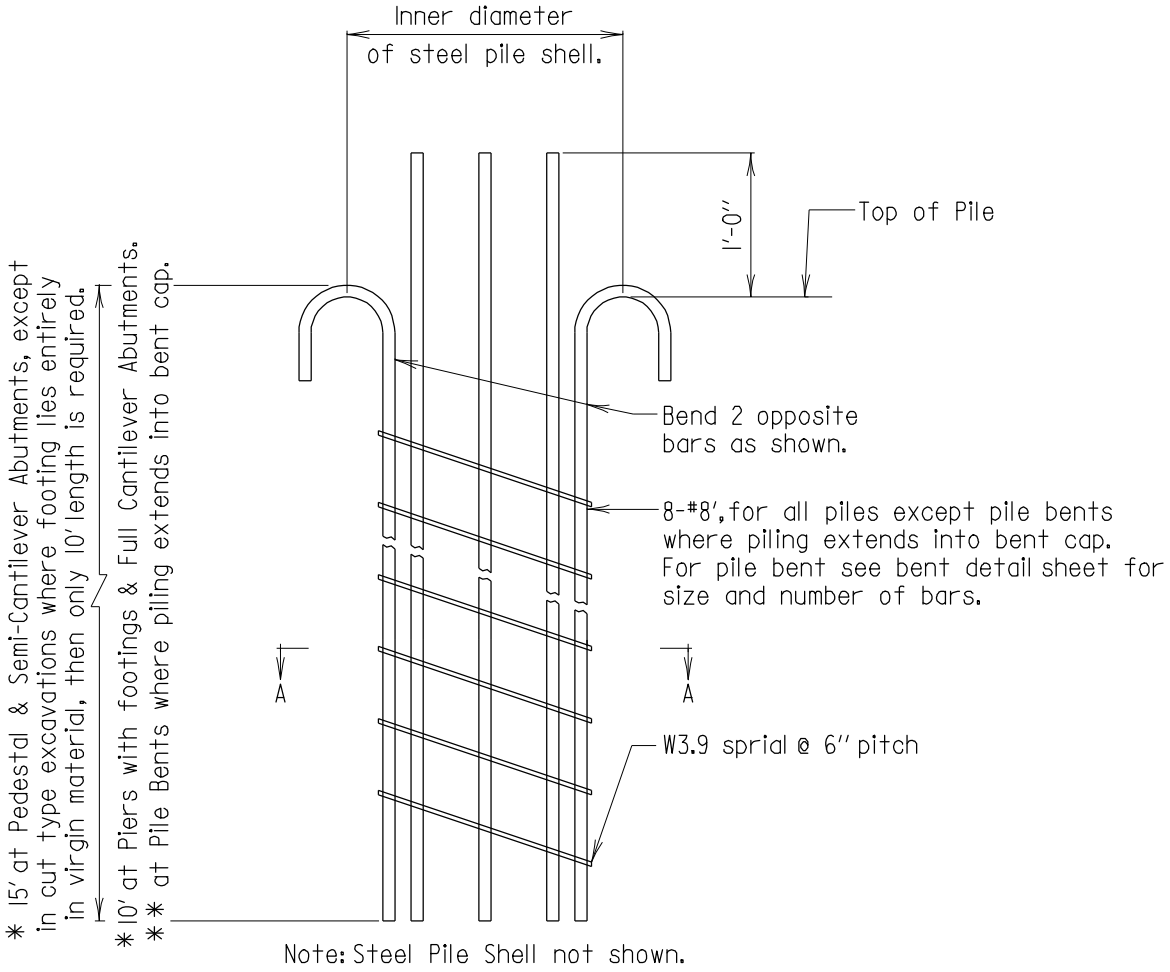
FHWA APPROVAL	
DATE: 12-19-79	

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

DETAILS FOR CAST-IN-PLACE CONCRETE PILES

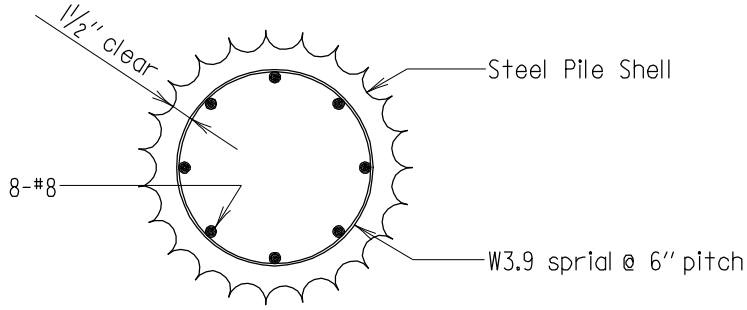
STANDARD NO. BR-FD(0.03)-79-81 SHEET 1 OF 1

BRIDGE-FOUNDATION



Note: Steel Pile Shell not shown.

ELEVATION
Scale:None



SECTION A-A
Scale:None

Note:
1. * Unless otherwise indicated on substructure contract drawing.
2. ** Full height of pile above finished groundline plus 10' unless otherwise indicated on substructure contract drawings.
3. Unless otherwise indicated on other Contract Plans or in the Special Provisions the Steel Pile Shell shall be a minimum #5 gauge. This will apply to pile shells with or without deformations.
4. Cage required for all pile shells with or without deformations.
5. All materials and dimensions shown are minimums. Engineer shall design.

FOR OFFICE USE ONLY

APPROVAL
R.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 8/9/79

REVISIONS	
SHA	FHWA
6-16-92	·
10-27-92	·
1-22-01	·
10-9-07	·

FHWA APPROVAL
DATE: 12-19-79

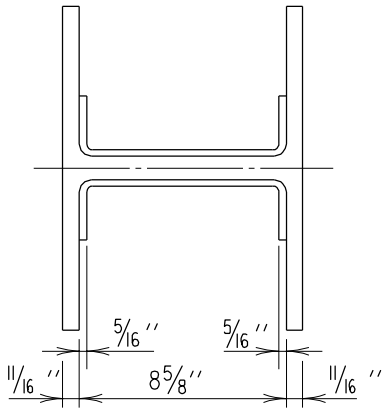
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

VERIFIED 10-9-2007 LRFD

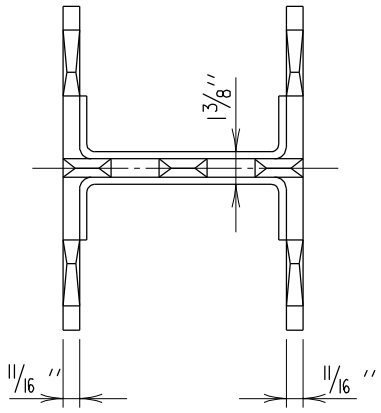
DETAILS FOR CAST-IN-PLACE CONCRETE PILES

STANDARD NO. BR-FD(0.03)-79-81(L) SHEET 1 OF 1

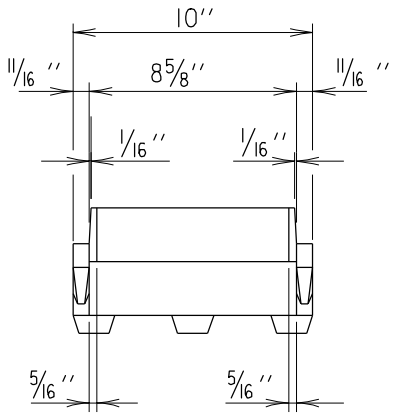
BRIDGE-FOUNDATION



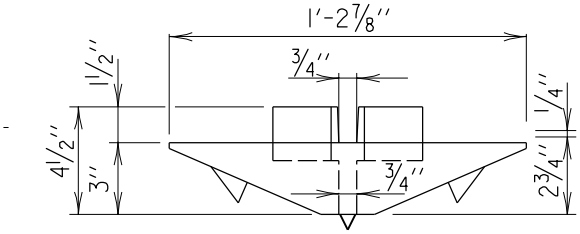
PLAN
Scale: 1 1/2'' = 1'-0''



PLAN
Scale: 1 1/2'' = 1'-0''



ELEVATION
Scale: 1 1/2'' = 1'-0''



SIDE VIEW
Scale: 1 1/2'' = 1'-0''

Size of Pile	Size of 45 Bevel	Size of Groove Weld
10 x 42	1/4	5/16
10 x 57	1/4	5/16

Note:
1. Material: Cast Steel A.S.T.M. A27 65/35. All fillets 3/8''.
2. Point to be welded to pile with a continuous single bevel groove weld along outside face of flange. Exterior face of flange to be flame cut beveled at 45° prior to welding.
3. For each shipment of points a foundry certificate verifying material meets the Specifications is required.

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF STRUCTURES
DATE: 10/17/79

REVISIONS	
SHA	FHWA
12-13-79	1-29-80
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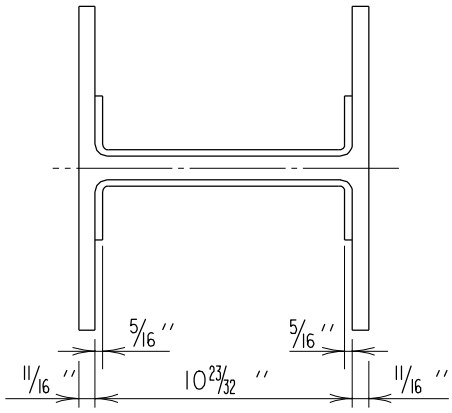
FHWA APPROVAL
DATE: 1-16-80

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

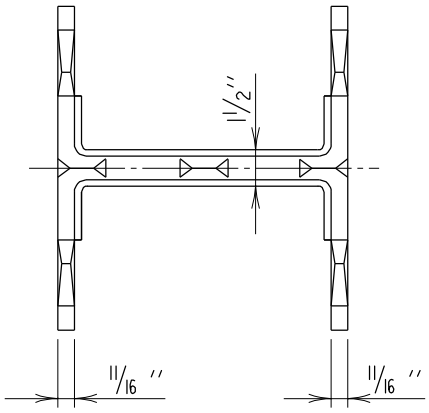
TOOTHED PILE POINT FOR 10'' H PILE

STANDARD NO. BR-FD(0.07)-79-87 SHEET 1 OF 1

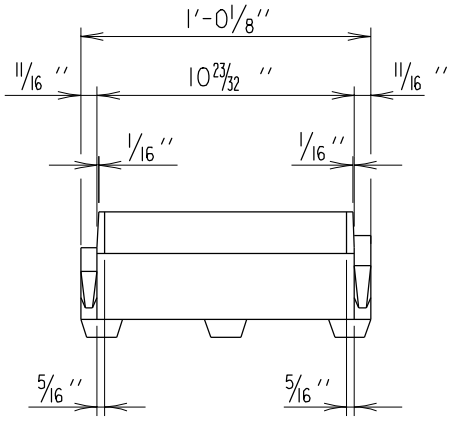
BRIDGE - FOUNDATION



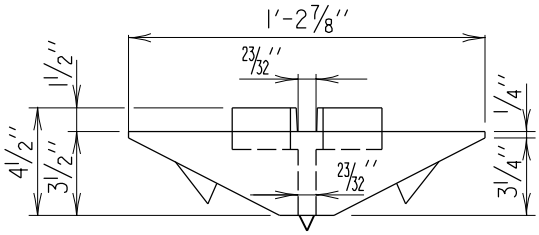
PLAN
Scale: 1 1/2'' = 1'-0''



PLAN
Scale: 1 1/2'' = 1'-0''



ELEVATION
Scale: 1 1/2'' = 1'-0''



SIDE VIEW
Scale: 1 1/2'' = 1'-0''

Size of Pile	Size of 45 Bevel	Size of Groove Weld
12 x 53	1/4	5/16
12 x 74	5/16	5/16

Note:
1. Material: Cast Steel A27 65/35. All fillets 3/8''.
2. Point to be welded to pile with a continuous single bevel groove weld along outside face of flange. Exterior face of flange to be flame cut beveled at 45° prior to welding.
3. For each shipment of points a foundry certificate verifying material meets the Specifications is required.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 10/17/79

REVISIONS	
SHA	FHWA
12-13-79	1-29-80
4-28-94	·
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·	·

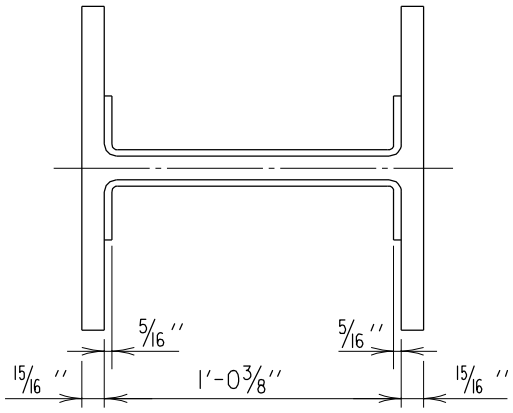
FHWA APPROVAL
DATE: 1-16-80

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

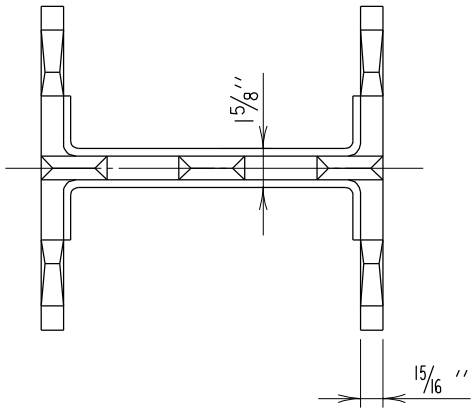
TOOTHED PILE POINT FOR 12'' H PILE

STANDARD NO. BR-FD(0.08)-79-88 SHEET 1 OF 1

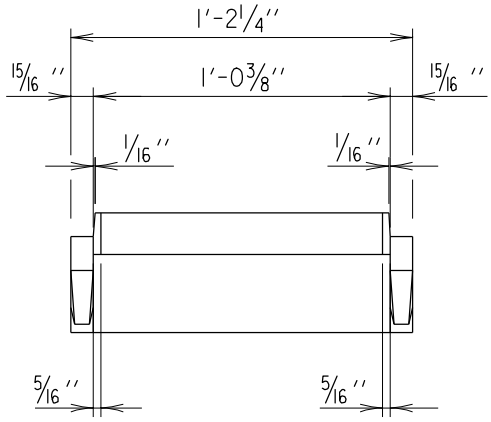
BRIDGE - FOUNDATION



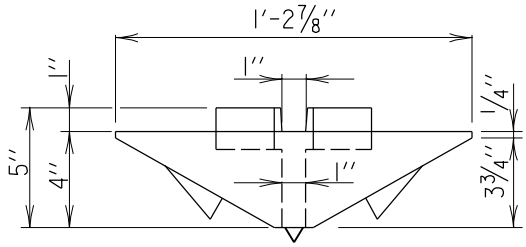
PLAN
Scale: 1 1/2'' = 1'-0''



PLAN
Scale: 1 1/2'' = 1'-0''



ELEVATION
Scale: 1 1/2'' = 1'-0''



SIDE VIEW
Scale: 1 1/2'' = 1'-0''

Size of Pile	Size of 45 Bevel	Size of Groove Weld
14 x 73	1/4	5/16
14 x 89	5/16	5/16
14 x 102		
14 x 117		7/16

Note:
1. Material: Cast Steel A.S.T.M. A27 65/35. All fillets 3/8''.
2. Point to be welded to pile with a continuous single bevel groove weld along outside face of flange. Exterior face of flange to be flame cut beveled at 45° prior to welding.
3. For each shipment of points a foundry certificate verifying material meets the Specifications is required.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 11/14/79

REVISIONS	
SHA	FHWA
12-13-79	1-29-80
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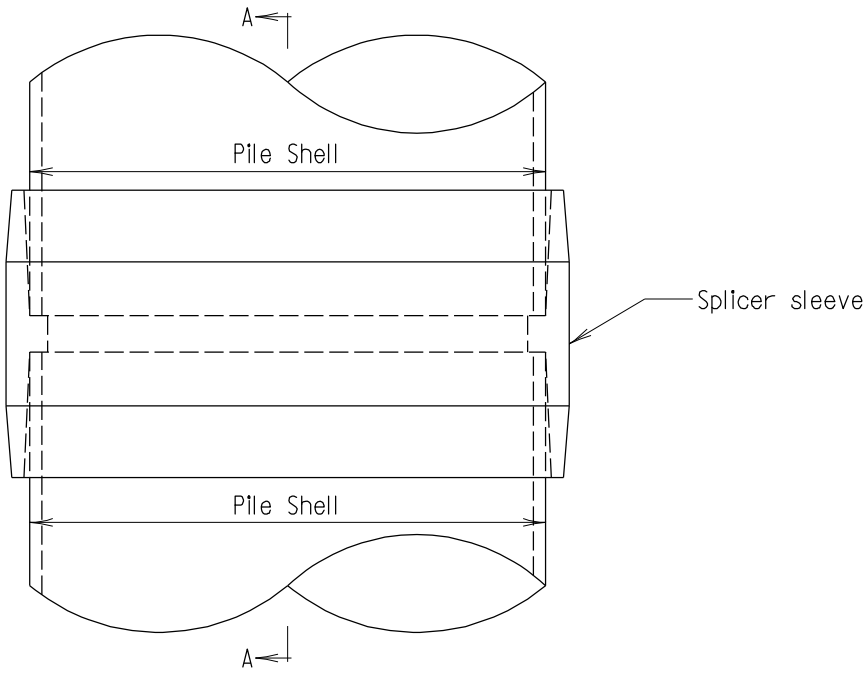
FHWA APPROVAL
DATE: 1-16-80

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

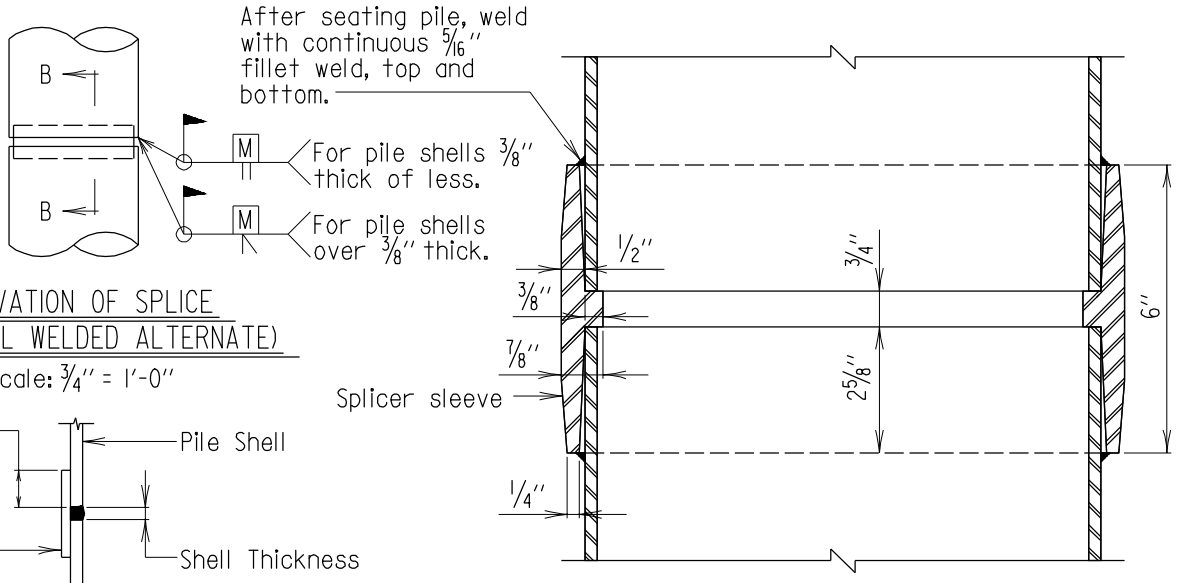
TOOTHED PILE POINT FOR 14'' H PILE

STANDARD NO. BR-FD(0.09)-79-89 SHEET 1 OF 1

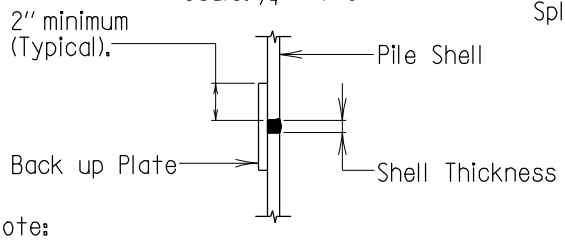
BRIDGE - FOUNDATION



ELEVATION OF SPLICE
(USING SPLICER SLEEVE)
Scale: 3" = 1'-0"



ELEVATION OF SPLICE
(USING ALL WELDED ALTERNATE)
Scale: 3/4" = 1'-0"



Note:
Back-up plate to be cut from same pile size as is being spliced. Cut and bend to fit inside diameter of pile.

SECTION B-B
Scale: None

SECTION A-A
Scale: 3" = 1'-0"

Notes:
1. No pile splicing to be allowed on any portion of pile that is to remain exposed in completed structure.
2. Splicer sleeve material shall be steel conforming to ASTM A-36.
3. Contractor has the option of using either the "Splicer Sleeve" or "All " Welded" alternates.

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF STRUCTURES
DATE: 8/29/83

REVISIONS	
SHA	FHWA
6-8-84	11-8-84
11-14-85	6-8-90
1-22-01	·
·	·

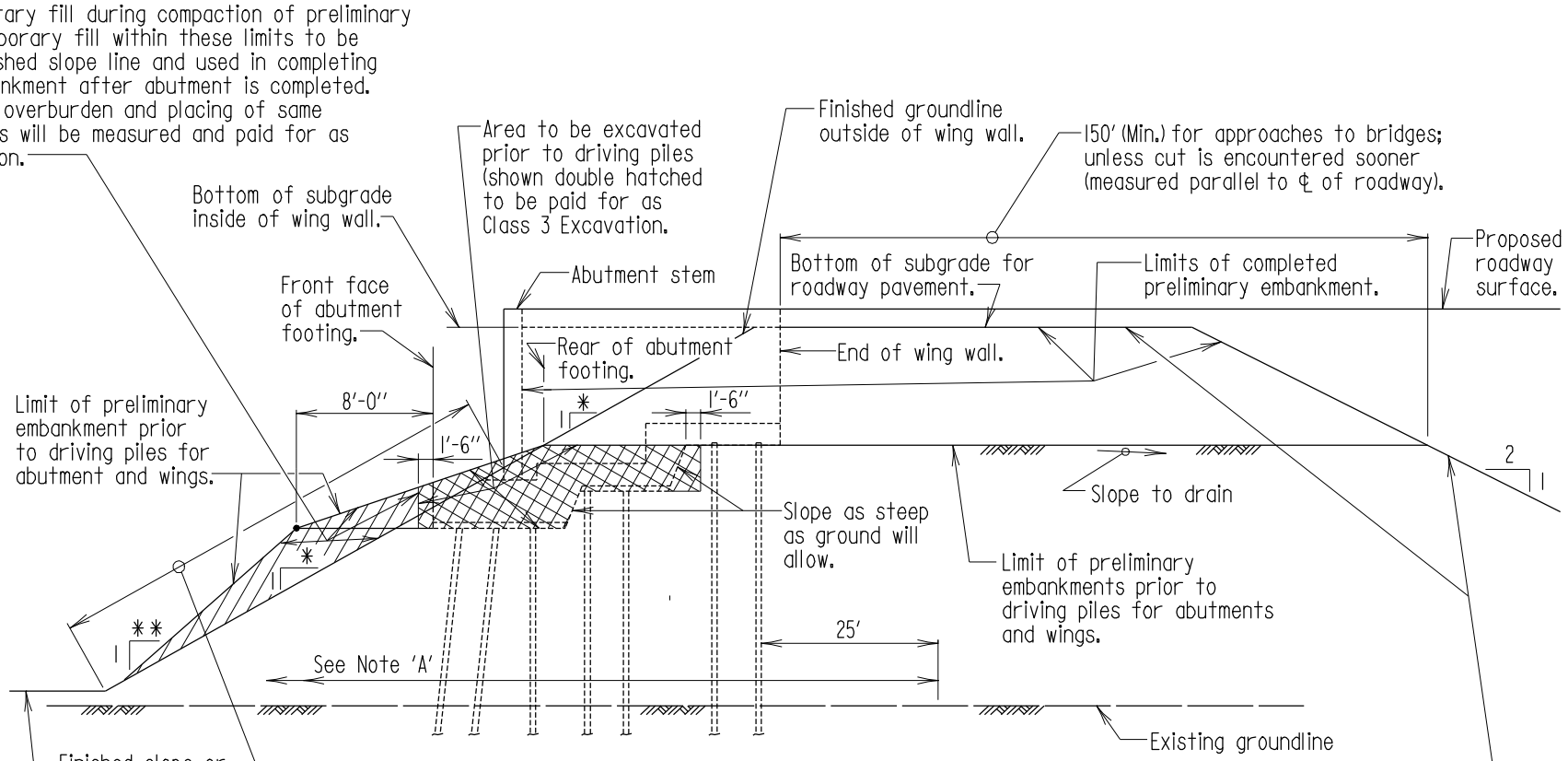
FHWA APPROVAL
DATE: 11-4-84

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SPLICE FOR CAST-IN-PLACE
CONCRETE PIPE PILE SHELL

STANDARD NO. BR-FD(0.11)-83-152 SHEET 1 OF 1

BRIDGE - FOUNDATION



ELEVATION
Scale: None

Note A:
No boulders, rocks, or stumps in this area of fill and all stumps, surface boulders and rocks to be removed from existing ground within these limits.

FHWA APPROVAL
DATE: 6-8-90

APPROVAL
E.S. Chaney DIRECTOR
OFFICE OF STRUCTURES
DATE: 9/6/85

REVISIONS	SHA	FHWA
	6-23-87	6-8-90
	4-27-94	.
	3-20-01	.
	7-24-01	.

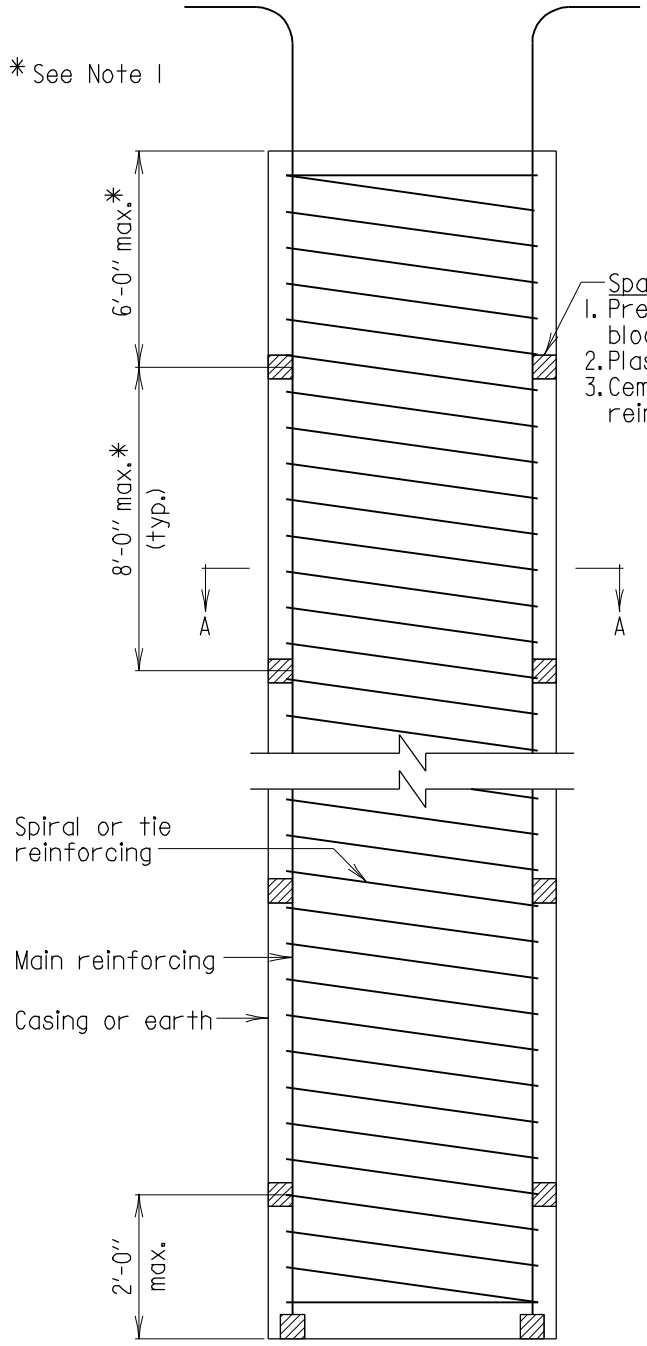
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

PRELIMINARY EMBANKMENT FOR SEMI-CANTILEVER TYPE ABUTMENTS ON PILES WITH STEPPED WING WALL FOOTERS

STANDARD NO. BR-FD(0.12)-85-174

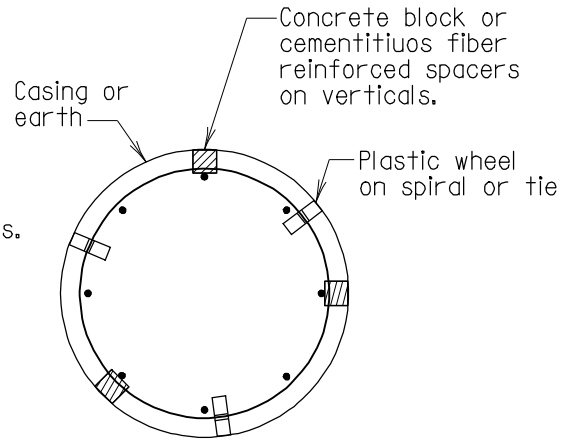
SHEET ⊥ OF ⊥

BRIDGE-FOUNDATION



PILE OR CAISSON

Scale: 3/8" = 1'-0"



SECTION A-A

Scale: 3/8" = 1'-0"

Notes:

1. The Contractor has the option of using any of the spacers shown for the reinforcement cage. The spacing of the spacers for proprietary items shall be as recommended by the manufacturer.
2. The pitch of spiral reinforcement must be considered for some wheel type spacers.
3. Concrete spacer blocks to be tied to main reinforcing with a double tie of #16 tie wire or equivalent.
4. For size and number of main reinforcing steel and size of spiral or tie reinforcing steel see other details elsewhere.
5. Use 3 spacers per horizontal plane for caissons less than 36" in diameter. Use 4 spacers per horizontal plane for caissons 36" in diameter and greater or as recommended by the manufacturer of the proprietary items.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF STRUCTURES
DATE: 11/14/95

REVISIONS	
SHA	FHWA
8-7-98	·
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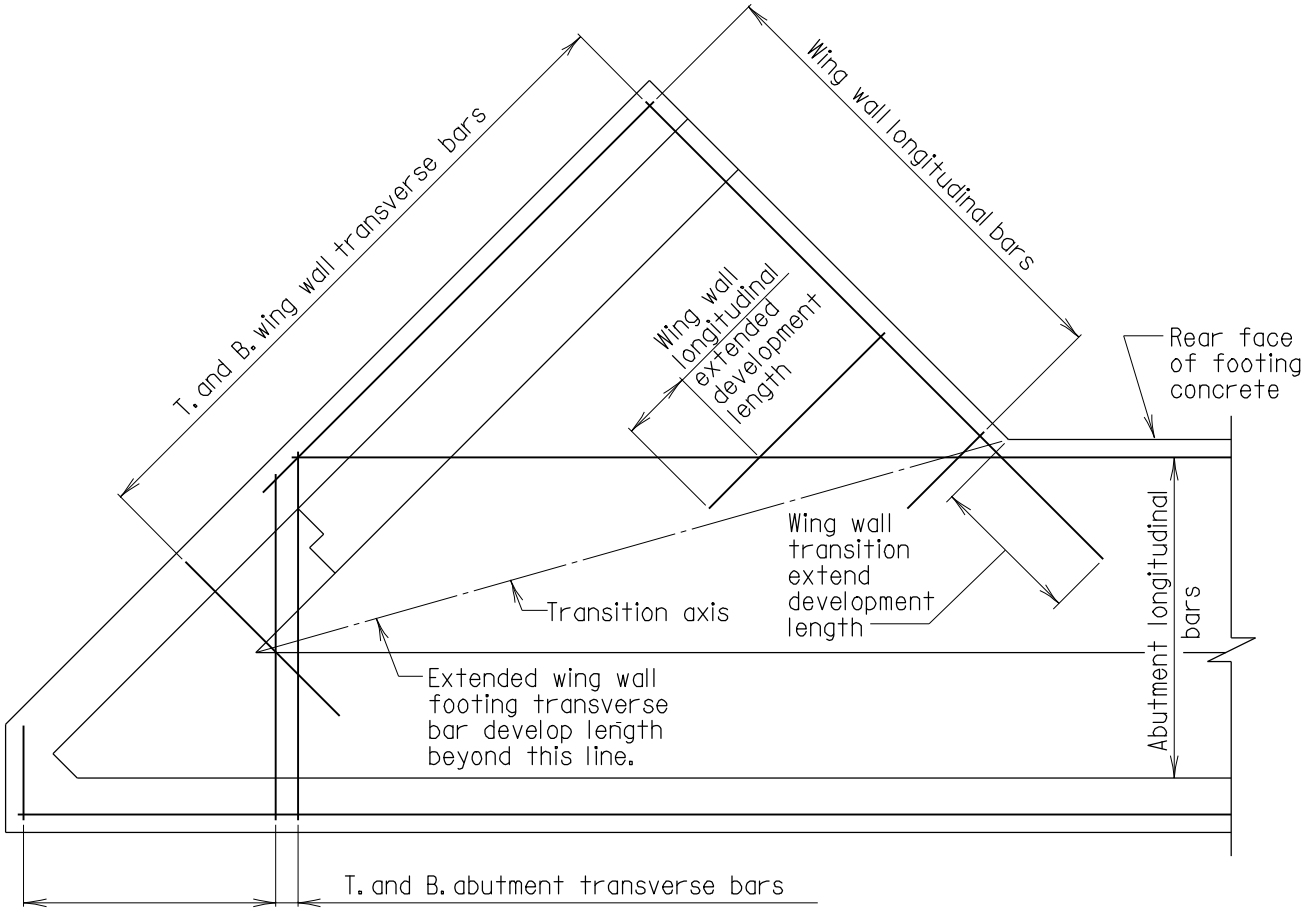
FHWA APPROVAL
DATE: ·

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

CAISSON/PILE REBAR CAGE CLEARANCE SPACING DEVICES

STANDARD NO. BR-FD(0.13)-95-310 SHEET 1 OF 1

BRIDGE - FOUNDATION



ACUTE CORNER

Scale: 3/8" = 1'-0"

FOR OFFICE USE ONLY

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF STRUCTURES
DATE: 11/17/97

REVISIONS	
SHA	FHWA
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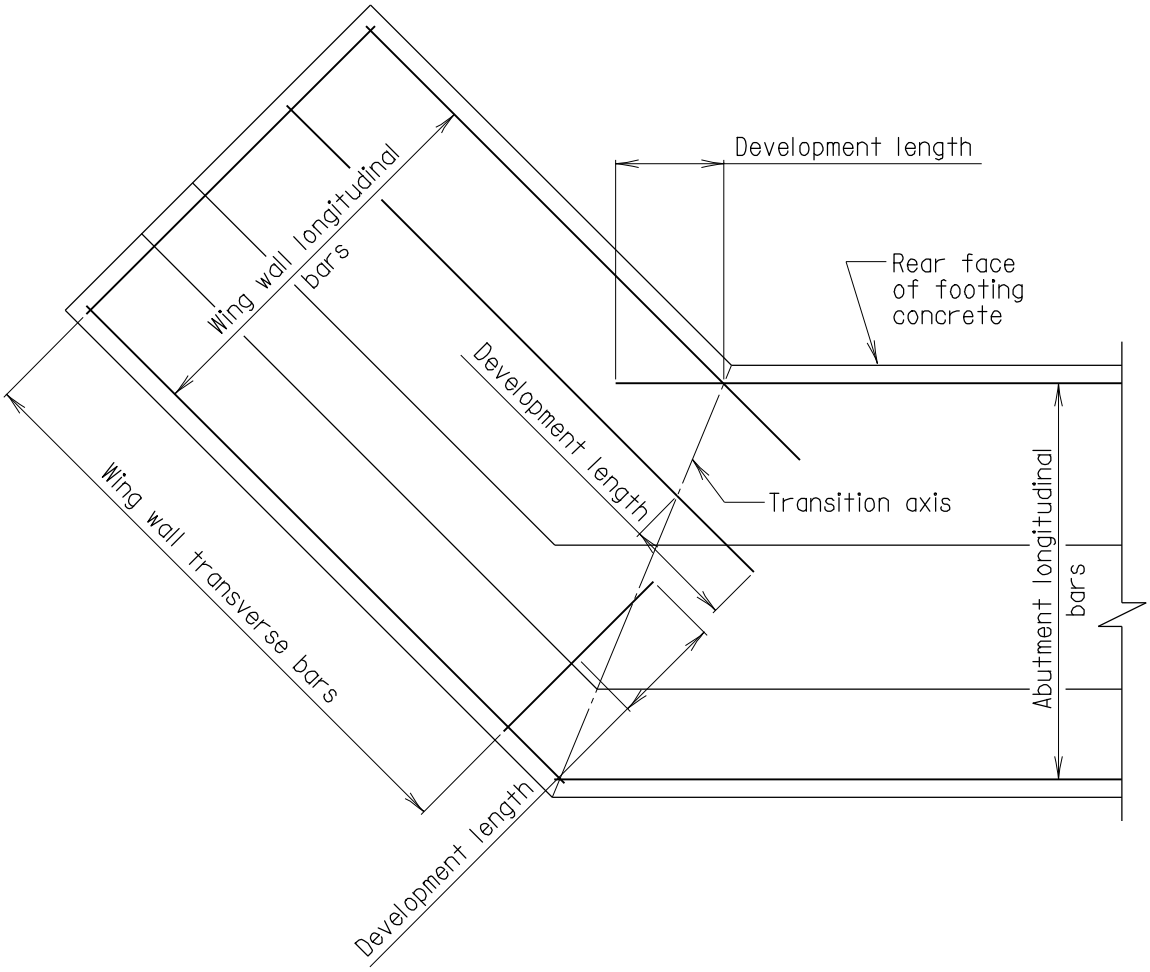
FHWA APPROVAL
DATE: .

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SKEWED ABUTMENT AND WING WALL FOOTING INTERSECTION

STANDARD NO. BR-FD(0.14)-97-322 SHEET 1 OF 2

BRIDGE - FOUNDATION



OBTUSE CORNER

Scale: 3/8" = 1'-0"

FOR OFFICE USE ONLY

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF STRUCTURES
DATE: 11/17/97

REVISIONS	
SHA	FHWA
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FHWA APPROVAL
DATE: .

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SKEWED ABUTMENT AND WING WALL FOOTING INTERSECTION

STANDARD NO. BR-FD(0.14)-97-322

SHEET 2 OF 2

BRIDGE - FOUNDATION